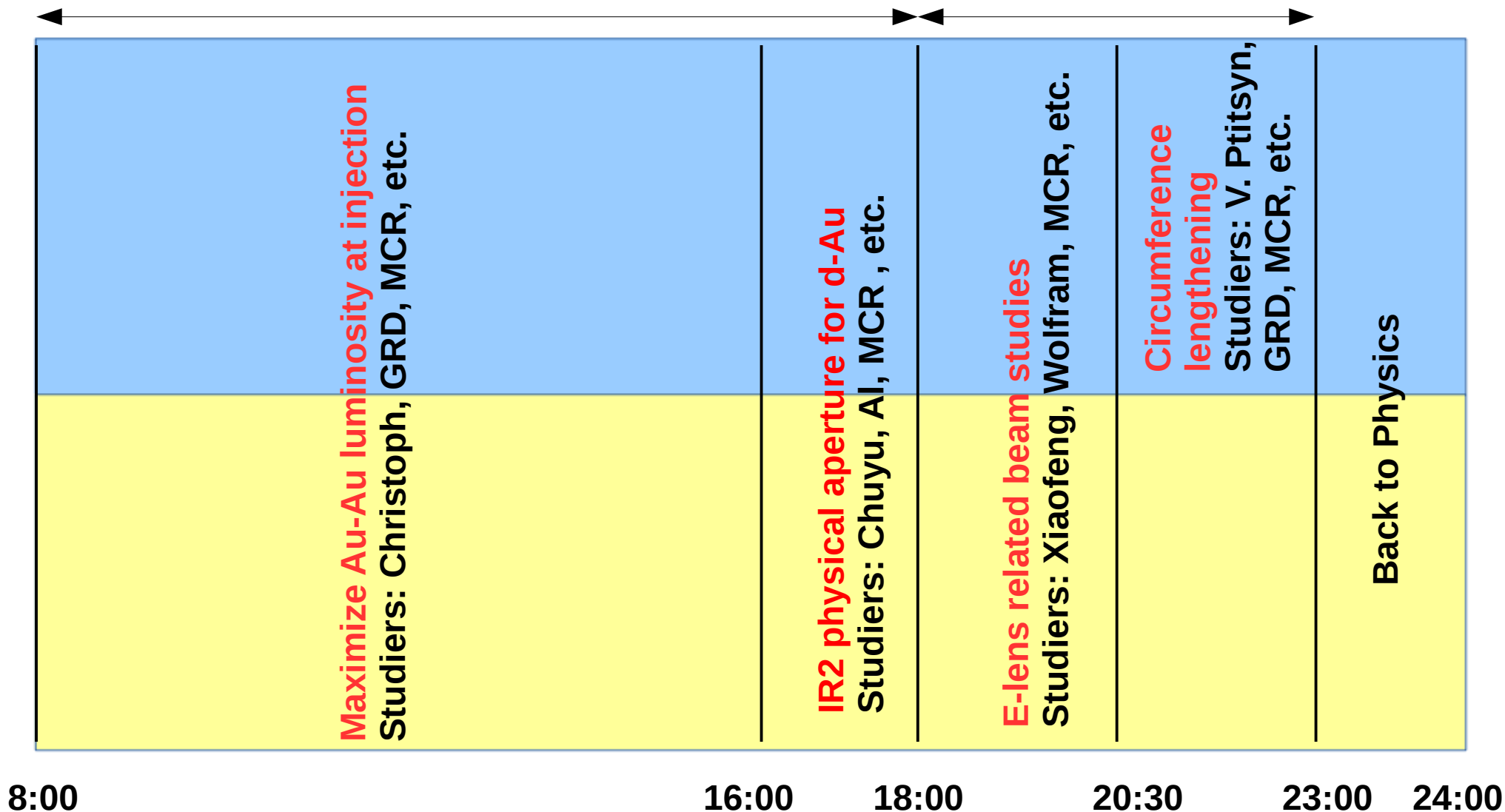


# APEX Schedule for March. 09, 2016

Injection

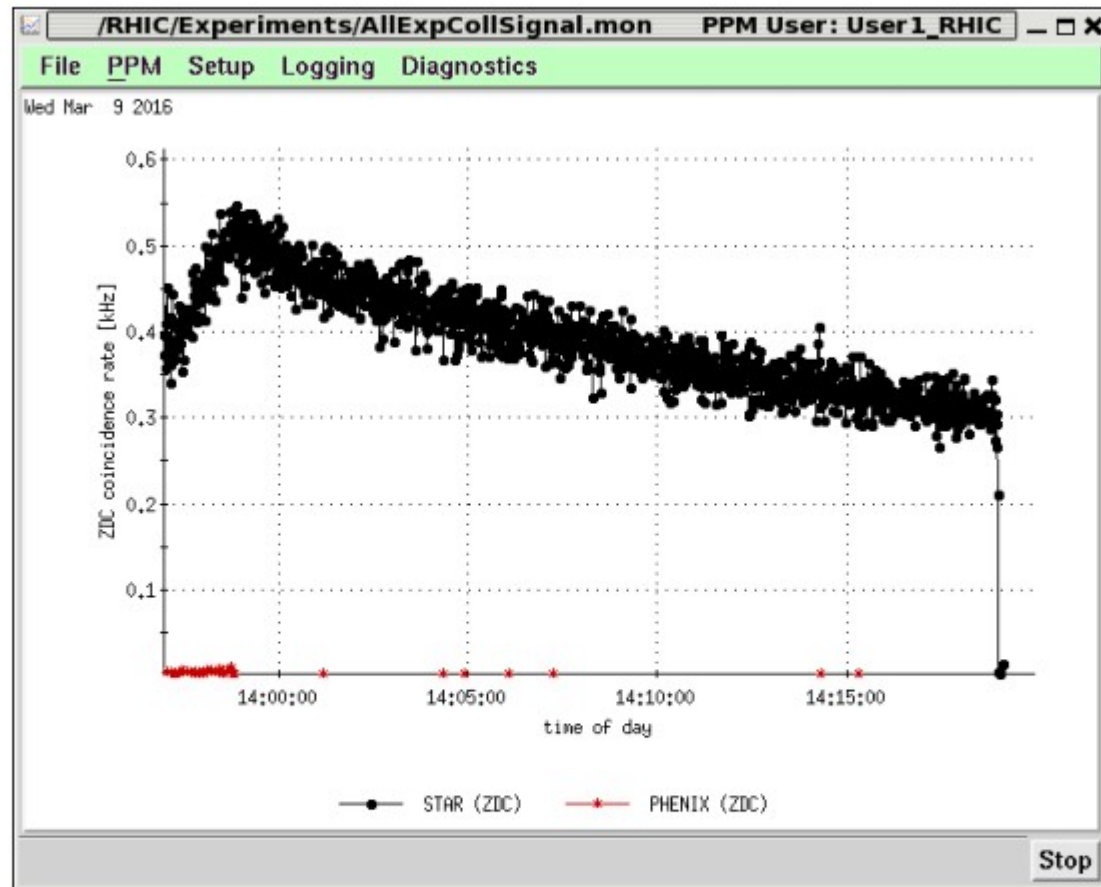
Store



# Improving the luminosity at injection energy

C. Montag, A. Drees, G. Robert-Demolaize, A. Marusic, MCR

- Prepared three injection lattices with  $\beta^* = 2.5, 3.0,$  and 3.5 m at STAR only (PHENIX will not run at low energy in 2019-20)
- Loaded 3.5 m lattice and set up the machine
- Setup took a lot longer than anticipated. Tunes were far off, and difficult to find at all in the vertical plane



Peak rate is factor 2 higher than in Run-11, and lifetime is much better

- **Achieved** factor 3-4 integrated luminosity increase over Run-11 - **the minimum goal**

# IR2 Physical Aperture for d-Au

## Chuyu, Al, MCR

How to inject beams in d-Au run  
with IR2 aperture limit?

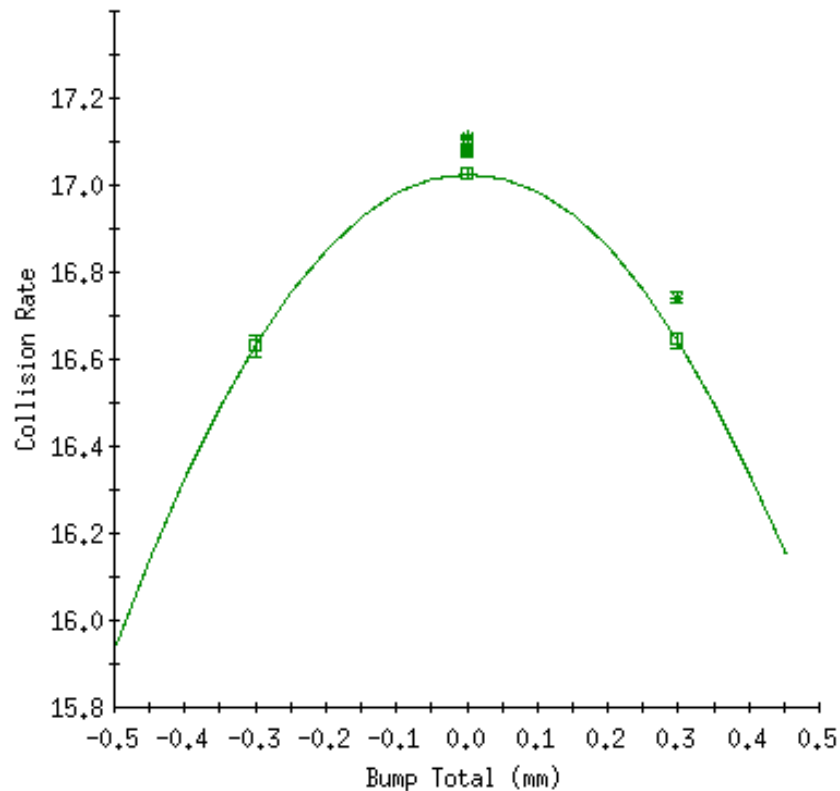
- Inject IBS-robust Deuteron beam first with no vertical offset.
- Once Blue ring is filled with Deuteron, move beam down to -4 mm vertical offset at IR2.
- Then inject Gold beam in Yellow ring with +4 mm vertical offset.
- Both beams are with horizontal offset in triplets and D0s to reduce beam angles.

# E-lens Related Beam Studies

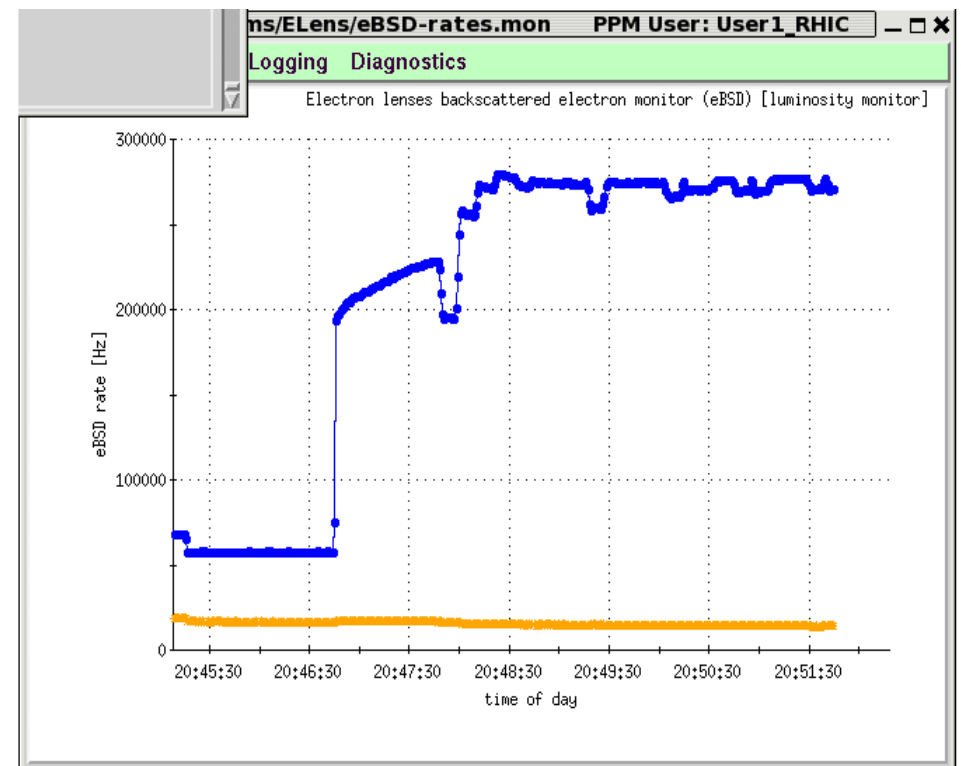
æ Mar 09 20:53 cp Wolfram (Xiaofeng, PeterT, Toby)

## End of e-lens study.

After some problems accelerating beam to store, had a store, turned on both lenses and aligned both lenses. Relatively high eBSD background in Blue.



□ Plane:X \* Plane:Y



# Circumference Lengthening

Vadim, GRD, Al, Yue, Yun, MCR

- Accelerated 12 bunch Blue beam to the store with the special ramp (no separation and protection orbit bumps at the store), commissioned at previous APEX session
- Nonlinear chromaticity correction at the store:
  - Verified sextupole settings found from previous study. Worked well.
  - Applied improved settings (as calculated by Guillaume).  
2<sup>nd</sup> (and possibly 3<sup>rd</sup> order) chromaticities have been further improved. But lifetime deteriorated?!
- Radial shift ramp (prepared and controlled by Guillaume and Al) was attempted. Beam survived up to -9mm radial orbit (as measured by the arc BPMs)

# Last orbit before beam abort

-9mm

